

## Submission to Narrabri Gas Project

There are a number of contentious matters relating to this project.

### **1. Climate Change**

There is no greater threat to our health, well-being and even long-term survival than the issue of Climate Change. It is greater than the issue of Covid19.

Methane from Coal Seam Gas is a major source of Carbon emissions contributing to global warming. This is an indisputable fact. The Gas Industry claims that this is “cleaner energy source”, and provides a transition from “dirtier” coal.

However there seems to be little acknowledgement or allowance for fugitive emissions of methane from well and pipeline leakage, flares, or seepage through geological structures such as faults, dykes etc. The industry claims total leakage of 0.1%. There have been no comprehensive studies in Australia to establish the true fugitive emissions. Nevertheless there are numerous observations that indicate much greater leakages, with some examples as follows.

Some studies in Australia suggest emissions are even as high as 10%.

Recent satellite analysis carried out by Harvard University in 2018 and 2019 from oil and gas wells in Texas and New Mexico, has indicated that 3.7% of the methane captured had been lost to the atmosphere. Reuters reported last month that satellites detected huge plumes of methane escaping from the Yamal pipeline of up to 93 tonnes of methane per hour. Other large leakages were also measured.

At anything over about 3% fugitive emissions, methane production becomes a more polluting energy source than coal. Man made methane emissions world-wide are rapidly rising. There is no doubt that methane is becoming a highly significant Greenhouse Gas.

There is no justification for developing new sources of gas, as clean renewable resources are now lower in cost and quicker to build.

### **2. Biodiversity**

The world is facing an extinction crisis which will have substantial implications for the continuation of healthy, sustainable ecological earth systems. These systems help provide fresh water, healthy soils, functioning ecosystems, etc.

This project proposes the development of a large portion of the Pilliga Forest. The Pilliga is the largest temperate woodland in Eastern Australia west of the Dividing Range. It is home to a rich diversity of species. Following brief independent surveys, a significant number of threatened fauna and flora have been identified in the Forest.

The proposed project will entail the clearing of numerous well-sites, connecting roads and pipelines which will cause much disturbance to the Pilliga Forest.

There is no doubt that the project would lead to a major change to the largely unspoilt character of the forest, and threaten some sensitive and endangered ecosystems. The presence of endangered, or threatened fauna and flora in the area, raises the question of whether the area should be subject to the protections provided by the Commonwealth EPBC Act? Why has this Act not been implemented in respect of this sensitive area??

### **3. Water**

The proposed project would require the removal of large quantities of water from the coal seams and surrounding strata beneath the Pilliga Sandstone.

The Pilliga Sandstone is a vital fresh water source used for irrigation, stock, and domestic purposes. It is also a recharge area for the Great Artesian Basin.

The water removed from these strata contains salt, and various heavy metals. Santos has no feasible plans to safely dispose of the large quantities of saline and polluted waste generated by the project.

Depressurisation of the coal seams and surrounding strata caused by the operations may lead to loss of water from the Pilliga Sandstone.

The hydrological model used by Santos has been described by the Department of Planning water expert as having “poor predictive capacity”. Santos claims that the removal of the water and methane from the coal measures will have no impact on the Pilliga aquifer.

There are a number of ways in which contamination or loss of water may occur to the aquifers of the Pilliga Sandstone.

The effects of dewatering and subsequent depressurisation of the coal seams in order to facilitate flow of methane from the coals, may lead to destressing and partial relaxation of surrounding strata. Gas and water could thus flow through fractures in the overlying rocks, to cause contamination of overlying aquifers, or even the loss of water from those aquifers.

Failure of some of the gas wells is also likely at some stage.

A report from Proceedings of National Academy of Science on “Integrity of Gas Wells” written by Robert J Jackson provides some historical data on Gas Well failure.

Jackson concludes that that around 6% of unconventional wells (which include Coal Seam Gas wells) fail. At this rate there would be a significant number of failed wells from the Narrabri Gas Project. Even if the actual failure rate of wells is much lower than this, there remains a risk that any failures that do occur could allow methane and polluted water to flow into fresh water aquifers.

### **4. Chief Scientists recommendations**

Coal Seam Gas Exploration and development has been a controversial matter in NSW. There had been much opposition from the community. As a result of this opposition, the Government Chief Scientist was commissioned to prepare a report on the matter. The report was completed in 2014.

A Parliamentary Report to the Government, reviewing the Chief Scientist's recommendations, completed in February 2020 revealed the following. Only 2 the 16 recommendations of the Chief Scientist have been implemented in full, and half have of these recommendations have not been implemented at all. This in spite of the fact that the Government has had over 5 years to deliberate since the original report..

An important omission is that there remains no “robust and comprehensive insurance against environmental risk”.

## **5 . Waste**

Santos propose to use reverse osmosis to treat the water produced from the wells. This will result in huge volumes of concentrated salt brine, containing heavy metals and other toxic substances.

The proposed disposal of this material is problematic. It cannot be allowed to pollute water and soil.

## **6 . Other issues**

There have already been over 20 leaks and spills from Coal Seam Gas Exploration activity in the Pilliga. This does not bode well for any future development

The Pilliga Forest has experienced numerous bushfires over recent years, yet Santos have been granted exemption from fire bans, allowing them to release of flares from gas wells.

Very little attention seems to have been focused on the potential health issues of this project. Following intensive Coal Seam Gas development in the Darling Downs area, many health issues were identified from work done by local doctors in the area, including Geralyn McCarron. Further investigation may be warranted.

Gomeroi Aboriginal cultural heritage assessment has identified 90 sites of cultural significance in the Pilliga area. More detailed surveys will be required.

**There are a number of critical matters highlighted here, I therefore believe that the Project should not be approved.**

Sincerely  
Peter Lamb